US005171319A

United States Patent [19]

Keates et al.

[11] Patent Number: 5,171,319

[45] Date of Patent: Dec. 15, 1992

[54] FOLDABLE INTRAOCULAR LENS SYSTEM

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[21] Appl. No.: **832,970**

[22] Filed: **Feb. 10, 1992**

[51] **Int. Cl.**[5] **A61F 2/16**

[52] **U.S. Cl.** **623/6**; 606/107

[58] **Field of Search** 623/6; 606/107

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[57] **ABSTRACT**

A foldable IOL system includes a foldable bi- or multifocal IOL and lens insertion instrument capable of unfolding the IOL by externally applied forces. The foldable IOL includes an oval lens body equipped with haptic structures for fixing the lens body within one of the chambers of the human eye. The lens body is foldable along two slits placed in the lens body parallel to and on either side of the oval lens body's long axis. The lens body is divided by the two separations into three parts: A central part and two side parts. The central part may be divided into two or more areas endowed with different optical powers. The lens body may be surrounded by an elastic ring that will keep the unfolded IOL in its unfolded position. The lens body may also have locking pins inside the slits that will keep the IOL in its unfolded position. The lens insertion instrument includes shielding to protect the folded IOL from loose tissue particles during the insertion process. Also provided is a vice-like holder for the central portion of the IOL to provide a stable base against which the two side parts may be unfolded. Folding and unfolding is aided by spring-activated platforms and threads that may be wound or unwound around a retaining drum. The lens folding and unfolding sequence and the removal of the insertion instrument's shielding may be mechanized through the use of linear and rotary hydraulic actuators.

28 Claims, 5 Drawing Sheets